

Why are We Here?

- To hear your comments about a proposed DOE action to expand its nuclear facility infrastructure to accomplish key civilian nuclear missions, including the possible restart of the Fast Flux Test Facility at the Hanford site near Richland, WA



Presentation Overview

- National Environmental Policy Act of 1969
- Purpose and need for the proposed DOE action
- Missions
- Proposed alternatives to be evaluated
- Pending decisions
- Proposed schedule



National Environmental Policy Act of 1969 (NEPA)

- Federal agencies prepare an environmental impact statement (EIS) for any major Federal action that may significantly affect the quality of the human environment
- Federal decision-makers consider the environmental effects of proposed actions and alternatives to foster better decision-making
- Public participation is one of the key requirements of NEPA. Scoping is the initial opportunity for public involvement in an EIS



Elements of the Decision-Making Process



Purpose and Need for the Proposed DOE Action

- DOE is responsible for meeting National needs for isotope production and nuclear research & development (R&D)
- An adequate nuclear technology infrastructure -- reactors, accelerators, and hot cells used for nuclear R&D and isotope production -- is needed to continue to meet these responsibilities
- DOE's infrastructure is diminishing while the demand for steady-state neutron sources continues to increase



Proposed Action

- Evaluate how to accomplish new and expanded missions by possibly enhancing the existing nuclear facility infrastructure, including the role of the Fast Flux Test Facility



What Missions are NOT Included?

- Production of tritium
- Production of materials for weapons purposes
- Production of any other defense-related materials



What are the Missions?

- Medical and industrial isotopes
 - Cancer diagnosis, treatment, and research
 - Cardiac imaging and cardiovascular disease treatment
 - Osteoporosis and other bone-related research
 - Structural integrity verification
- Plutonium-238 production for future NASA missions
 - Generate heat and electricity for spacecraft instrumentation
 - Used safely for last 40 years in 26 missions
 - Only enabling technology for many deep space exploration missions



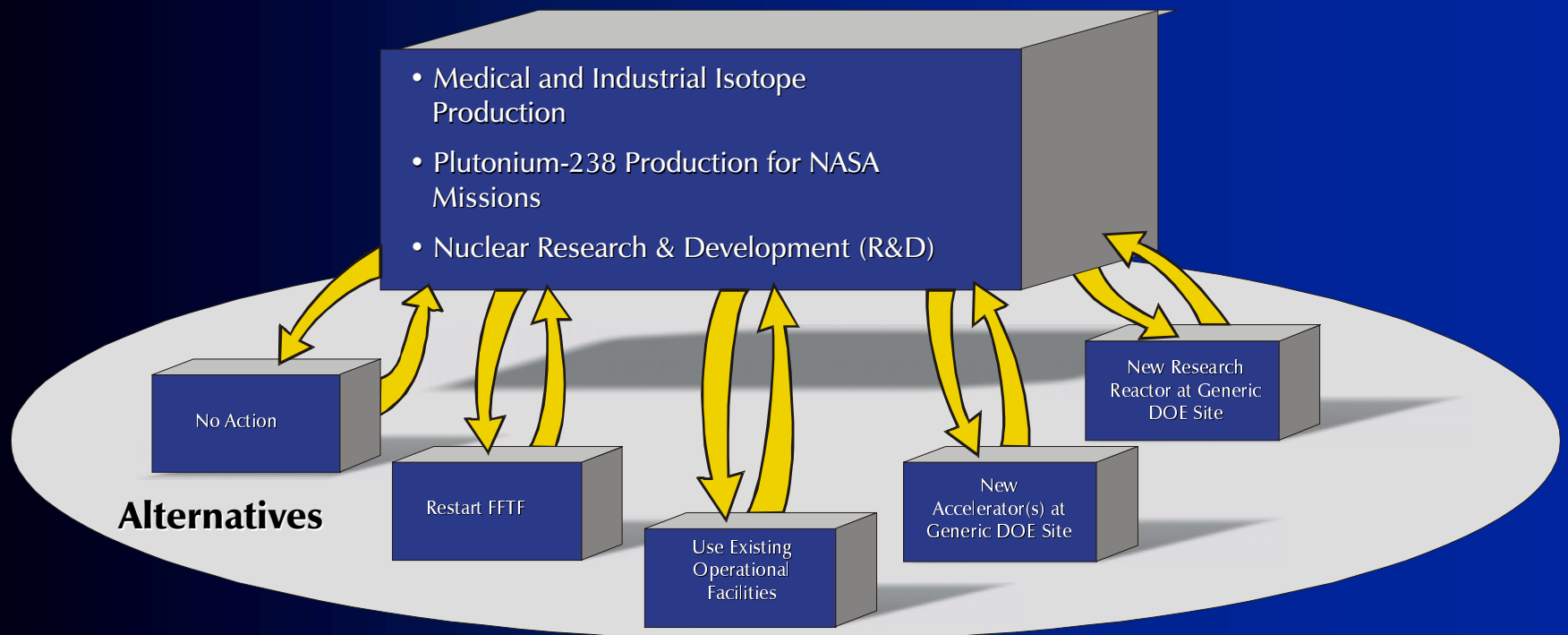
What are the Missions? (continued)

- Nuclear research and development
 - Essential to support U.S. nuclear energy programs and international collaboration
 - Testing of materials, nuclear fuels, and reactor components

Existing Nuclear Facility Infrastructure
Can Not Support All Proposed
Mission Requirements



Proposed PEIS Scope



DOE has no preferred alternative at this time



Alternatives

Alternative	Description
No Action Alternative: Maintain the status quo	<ul style="list-style-type: none"> • Continue medical and industrial isotope production and nuclear R&D at operating facilities within existing mission profiles • No domestic production of Pu-238 • Maintain FFTF in standby mode
Alternative 1: Restart the Fast Flux Test Facility (FFTF)	<ul style="list-style-type: none"> • Operate FFTF at 100 megawatts for 35 years to accomplish identified missions • Use onsite supply of mixed oxide (MOX) fuel for first 6 years of operation • Use existing MOX fuel from Germany or convert to highly-enriched uranium (HEU) fuel • Convert to HEU fuel when MOX inventory is used • Select existing facility or facilities to support FFTF missions
Alternative 2: Use existing operational facilities to the extent possible	<ul style="list-style-type: none"> • Meet projected medical and industrial isotope production and nuclear R&D missions needs, to the extent possible, using existing facilities without impacting existing missions • Establish domestic Pu-238 production capability • Deactivate FFTF permanently
Alternative 3: Construct new accelerator(s)	<ul style="list-style-type: none"> • Construct and operate one or more new accelerators at a generic DOE site for all identified missions • Select a new support facility at a generic DOE site for all identified missions, except for Pu-238 • Select existing facility for Pu-238 processing • Deactivate FFTF permanently
Alternative 4: Construct new research reactor	<ul style="list-style-type: none"> • Construct and operate a new research reactor at a generic DOE site for all identified missions • Select a new support facility at a generic DOE site for all identified missions, except for Pu-238 • Select existing facility for Pu-238 processing • Deactivate FFTF permanently



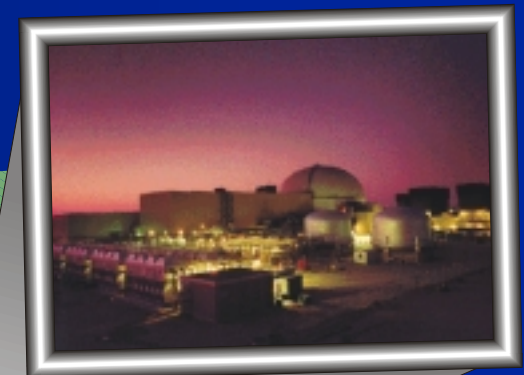
No Action Alternative

- Maintain the status quo
- Medical and industrial isotope production and nuclear research & development would continue at operating facilities within existing mission profiles
- No domestic production of Pu-238
- Rely on remaining Pu-238 inventory and/or additional purchases from Russia to meet the requirements of future missions
- Evaluate future of neptunium-237 inventory
- Maintain FFTF in standby mode



Fast Flux Test Facility

- 400-megawatt, liquid-metal (sodium) cooled nuclear research reactor located on the Hanford site in the State of Washington
- Operated for 10 years (1982-1992)
- Since 1995, maintained in standby mode with no fuel in the reactor vessel
- Past missions include:
 - Medical and industrial isotope production
 - Nuclear fuels and materials testing
 - Development of nuclear power plant operating and maintenance procedures
 - Production of tritium for fusion research



Alternative 1 - Restart FFTF

- Operate FFTF at nominal 100 megawatt power level for 35 years to accomplish identified missions
- Use onsite supply of mixed oxide (MOX) fuel for first 6 years of operation
- Use existing MOX fuel from Germany or convert to highly enriched uranium (HEU) fuel
- Convert to HEU fuel when MOX inventory is exhausted
- Select an existing hot cell facility at Hanford or other DOE locations to support FFTF missions



Alternative 2 - Use Existing Operational Facilities to the Extent Possible

- Meet projected medical and industrial isotope production and nuclear R&D missions needs, to the extent possible, using existing facilities without impacting existing missions
- Establish domestic Pu-238 production capability
- Deactivate FFTF permanently



Alternative 3 - Construct New Accelerator(s)

- Construct and operate one or more new accelerators at a generic DOE site for all identified missions
- Construct and operate a new support facility at the same DOE site for all identified missions, except for Pu-238
- Select existing facility for Pu-238 processing
- Deactivate FFTF permanently

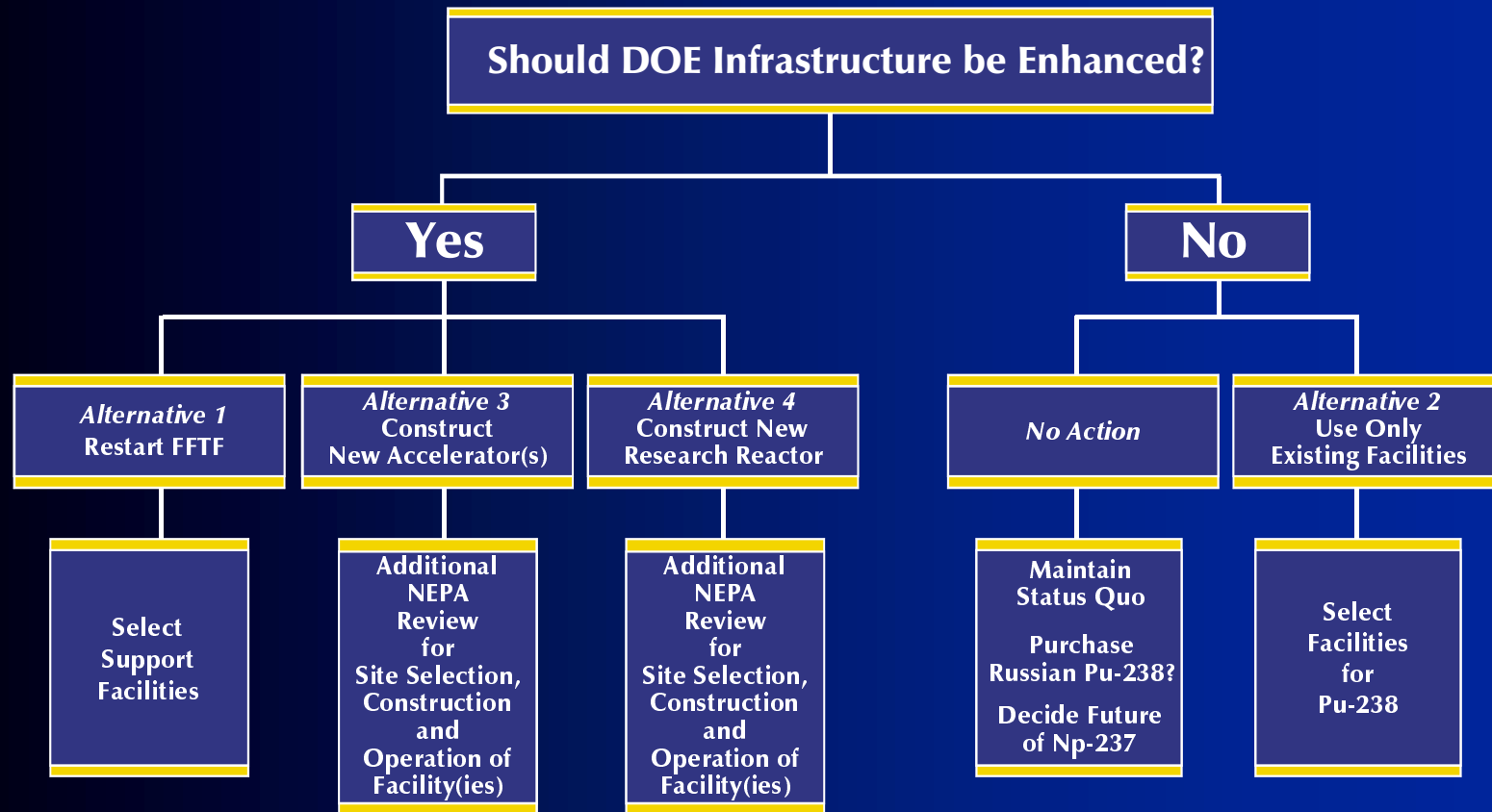


Alternative 4 - Construct New Research Reactor

- Construct and operate a new research reactor at a generic DOE site for identified missions
- Construct and operate a new support facility at the same DOE site for all identified missions, except for Pu-238
- Select existing facility for Pu-238 processing
- Deactivate FFTF permanently



Pending Decisions



The Proposed PEIS Schedule

1999

- September 15 Notice of Intent (64 FR 50064)
- October 13-27 Scoping meetings
- October 31 Scoping comment period ends

2000

- May Publish & distribute draft PEIS
- June Conduct draft PEIS hearings
- October Publish & distribute final PEIS
- December Publish Record of Decision



We Want Your Comments



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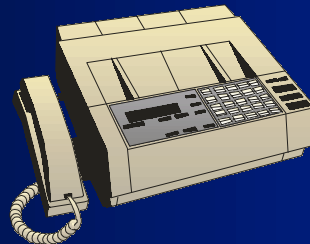
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Please submit comments by October 31, 1999

